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A Comparison Study of Depression in the Elderly: Traveling South versus Staying in the Midwest for the Winter

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A COMPARISON STUDY OF DEPRESSION IN THE ELDERLY: TRAVELING SOUTH VERSUS STAYING IN THE MIDWEST FOR THE WINTER

by

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This Independent Study, submitted by Sandra M. Zieffler in partial fulfillment of the requirements for the Degree of Master of Physical Therapy from the University of North Dakota, has been read by the Faculty Preceptor, Advisor, and Chairperson of Physical Therapy under whom the work has been done and is hereby approved.

(Faculty Preceptor)

(Graduate School Advisor)

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Signature Sandra M Zieffler

Date 12-14-99

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ABSTRACT

Depression is the primary mental health disorder in the elderly (people 65 years old and older). As the elderly are the fastest growing segment of the population in the United States, an increasing number of elders will be affected by this illness. The purpose of this study was to compare depression in the elderly between those who stay in the Midwest (Minnesota or North Dakota) year-round and those who travel south for all or part of the winter. A four-page self-administered questionnaire was distributed to 227 people thought to be at least 65 years old. The questionnaire consisted of background questions and the Geriatric Depression Scale (GDS). There was no significance found in depression scores between the two groups. These results may be due to the limiting factors of this study: a small sample size, the return of incomplete questionnaires, and an overall low depression rate in this sample.

CHAPTER I

INTRODUCTION AND REVIEW OF LITERATURE

The elderly (regarded as those people who are 65 years old and older) are currently the fastest growing population in the United States.[1] In 1995, approximately 13% of the people in the United States were at least 65 years old, and it is projected that this statistic will reach 20%, or one in every five people, between the years 2020 and 2030.[2] This population increase is two and a half times that of the population increase in people who are less than 65 years old.[3] As the overall life expectancy in the United States increased in 1993 to 75.5 years, it is only realistic to expect that the fastest growing segments of the population are those people in the 75-plus and 85-plus age groups.[2,4] In Minnesota and North Dakota, 14% to 15.9% of the population in each state are people 65 years old and older, and that percentage is expected to increase to over 16% by the year 2020.[2]

As the above figures reflect, an understanding of the elderly population is essential in today's society. People in this age group experience many changes in their lives as they get older which include the following: multiple loss (such as deaths of family and friends), decreased physical health, and changes in financial status.[4,5] It is not surprising, then, that the primary mental health disorder in the elderly is depression.[6,7] For community dwelling elders, the rate

of depression is 10% to 15%; this rate increases in those elders living in institutional settings.[8] It is important for physical therapists and other health care professionals to know and be able to recognize the signs and symptoms of depression as this illness may exacerbate a patient's disorder and/or limit the patient's ability to make a full recovery.

A common belief among many people is that depression is a state of mind that goes along with growing old. Billig strongly disagrees and states: "(Depression) should not be any more acceptable as a state of health than is pneumonia".[9(p3)] He also states,

> The older adult can look back on a history that is rich in experiences-some are undoubtedly sad, others joyful. There are always accomplishments and failures, struggles and times of ease. The mentally healthy adult can usually appraise these in some reasonable way, accepting with sadness and regret the losses and sufferings, and valuing the achievements. The trap of depression is not necessarily integral to the aging process (Table 1).[9(p2)]

Sadness should not be the predominant emotion at any time in a person's life, and when sadness leads to depression, a medical and psychiatric consultation needs to be pursued.[2] A study reported by Barrow[6] showed that when income, gender variables, and socioeconomic status were held constant, older people actually had lower depressive rates than did younger people in the same

Table 1. Normal Aging Versus Symptoms of Depression

Characteristics of Old Age	Symptoms of Depression
Worry	Worry that is continuous
Loneliness	Loneliness, not isolated socially
Past regrets	Regrets that are general, not specific
Inactivity	Inactivity due to a lack of interest
Halting speech	Pauses before speaking
Slowing	Intention slowed, not the action itself
Sleep disturbances	Person rises tired
Appetite, weight decrease	Taste continues to be unaffected
Fatigue	Constant fatigue
Tremor	Due to anxiety
Dizziness	Unrelated to posture

Adapted from Kermis MD. Mental Health in Late Life: The Adaptive Process. Boston, Mass: Jones and Bartlett Publishers, Inc; 1986.

situation. This study concluded, then, that depression might be due to social changes that come with aging rather than the biological changes of aging.

Causes and Predictors of Depression in the Elderly

Because depression is so prominent in the elderly population, it is important to understand some possible causes and predictors for the illness. A few of the causes of depression are loss, physical health, stress, and social issues.[5,7,10,11] Above and beyond these causes are factors, such as gender and lack of exercise, that may predict a person's chance of becoming depressed in his/her lifetime.

Old age is described as the "season of losses."[5] Many losses occur as a person ages including emotional, financial, social, and physical loss. A sense of helplessness may engulf the person as he/she experiences a loss of control over

life and major life events. One of the most common losses for elders who are married is the loss of their spouse. These people may experience loneliness, an anxiety or fear of living and being on their own, and/or a feeling of isolation because their bridge of support is gone.[5] It is obvious that any of these feelings could lead to depression.

Physical health status is a powerful predictor of mental health.[11] When elderly persons perceive themselves to be in poor health or to have a physical disability or disease, a higher incidence of depressed mood is indicated. Physical illnesses "probably do not cause depression, but rather make one more susceptible when reserves are low, when coping skills are decreased, and when stress is great."[9(p12)] Depression may also be caused by drug side effects or other physical conditions an elderly person is experiencing in which case the illness would be a secondary depression.[3]

Elderly people often use depression as a way to cope with life stressors.[3] There are many life events that an elder experiences that cause stress and may lead to a depressive state. Barrow[6] gave stress ratings to a number of these life events as elderly perceive them (100=highest rating of stress, 1=lowest stress rating): spouse death=100, close family member death=63, illness and personal injury=53, retirement=45, family member's change of health=44, and financial status change=38. Furthermore, an elder may be experiencing more than one of the life changes listed above at the same time.

Social support is a widely studied psychosocial risk factor of both mental and physical health, and it has been shown that a lack of social support is

associated with an increased rate of depression.[10] As people age, their social support system decreases due to the loss of family and friends.[9] Also, as the occurrence of illness increases and physical stamina decreases in older people, many social activities become more difficult to enjoy (people may need to plan ahead for extra assistance or do things alone). Social support, especially among friends, contributes to a sense of belonging, social status, and meaningfulness in life.[3] Friends become a source of support, entertainment, and information, and, in the process, make people happier and healthier.

Elderly people are also becoming a visible leisure class as the lifestyle of the retiree is accepted.[6] Activities of leisure give "meaning" to one's day, promote greater life satisfaction, and allow for increased physical activity which leads to self-reported better health.[12] Recreation and increased leisure time allows the elder the opportunity for renewal and refreshment within themselves and leads to a sense of wholeness for the person.[13]

In fact, some elders choose to migrate to the Sunbelt states for all or part of the winter due to opportunities for social interactions along with good accessibility for services and the desire for independence and privacy.[14] In a study by Ferraro,[14] it was shown that moves that are voluntary do not increase poor health effects, and moves to more favorable climates may actually improve health. However, other elders prefer to stay in their home area because of what it represents to them: the place where they raised their children, neighborhood interactions, family traditions, life-long friends, familiarity with the area, and the services available there. It seems to show, then, that the community and social

support surrounding the elder's place of residence has more to do with satisfaction of the individual than does the actual part of the country in which the elder resides.

Gender also plays a role in depression. Females tend to live approximately seven years longer than males.[3] Possible reasons for the difference in the lifespan are that females usually smoke less, see physicians more often, have less exposure to pollutants and other hazards, handle stress better, and have more social support.[7] Therefore, women are much more likely to be widowed, and the loss of a spouse may lead to a state of depression.[11]

Exercise has been shown to increase overall sense of well-being, decrease anxiousness and tension level, increase self-confidence, and actually slow down the physiological processes of aging in most body systems.[12] Regular exercise by the older individual also promotes general health through maintaining and increasing muscle mass (including contractability of the muscles of the heart), increasing the number of blood vessels and the volume of blood, decreasing bone loss (which is associated with osteoporosis), and increasing oxygen consumption. A study by Blair et al[13] concluded that the greatest increase in health was found between those people who did nothing and those who did a little. Even though only a small amount of exercise is needed for better health, a seven-fold difference in the survival rate was found between people who were the least and most physically fit at age 70.

Signs and Symptoms of Depression in the Elderly

There are many signs and symptoms that may lead to a diagnosis of depression. Signs are those changes that may be noticed by family, friends, or a clinician. Symptoms are the changes happening within the individual that may or may not be noticed by people who are in contact with that person.

Signs of possible depression may include a change in the personality or behaviors of the person; these changes would be noticeable as they would not be consistent with the person's usual reactions to activities or people around them.[9] Some of the changes may include being frequently teary or crying for no apparent reason, being agitated more than usual, being tired but unable to sleep, not taking care of their appearance as they did previously, having less energy, seeming to be in slow motion, and/or talking of suicide or feeling like they would be better off dead.

Symptoms of depression fall into three categories: physical, emotional, and cognitive. Physical symptoms may occur as being preoccupied with aches or pains, a disturbance of normal sleep patterns, decreased sexual activity, a loss of energy, change in appetite, or abusing drugs or alcohol.[7,9,15] Emotional symptoms of depression may include exaggerated worries, guilt, new statements of hopelessness, helplessness, worthlessness, or emptiness, and an overall sense of feeling "not right".[7,9] Rapid onset of memory impairment, difficulty concentrating, slowing of cognitive processes, or other fluctuations in functioning are examples of cognitive symptoms which may appear in depression.[7,9,15]

Being aware of possible reasons for depression and its signs and symptoms is very important as depression is one of the most treatable medical problems.[7,9] However, elderly people may resist interventions due to their fear of the unknown, their need and desire to be independent, their suspicions of past medical treatment, and their pride.[2] It is crucial to keep these special attitudes in mind and to approach any treatment of elder depression slowly and carefully. The individual will need to develop trust gradually, have the opportunity to hear all information available, and be completely involved in any decisions that are made.

Treatment and Prevention of Depression

The goal when treating depression is two-fold: to improve the person's quality of life through the relief of symptoms and to prevent recurrence of the illness.[15] There are three main approaches currently used for treatment of depression in the elderly which may be used separately or in various combinations to best suit the person's needs. Psychotherapy involves individual counseling and talking with the person or group therapy.[15,16] Family therapy is also a part of psychotherapy and may be used to involve the family of the person who is depressed using techniques such as conflict resolution, problem-solving strategies, and an assessment of each person's role in the family.[16] Psychotherapy is especially beneficial for those elders who refuse antidepressant medications.[15] It is helpful in the restructuring of negative thoughts and overgeneralizations and focuses on positive aspects of the person's life.

Pharmacotherapy generally involves the use of antidepressant medication.[16] The use of medications is indicated when the depressive symptoms are affecting the person's functional status and quality of life, the depression is severe or recurring, psychoses is involved, or there has been a previous positive response to medications.[15] In the elderly, drug interactions are likely with the use of antidepressants, and side effects may occur. Therapeutic effects of the medications usually occur in two to eight weeks. These medications are used for longer periods in the elderly as this population tends to have higher relapse rates. Maintenance pharmacotherapy indefinitely is a possibility.

Electroconvulsive shock therapy (ECT) is normally only used for severe, persistant depressive states.[15-17] It is especially effective for people who display suicidal ideation and psychoses. Electroconvulsive shock therapy gives rapid relief of symptoms, and the success rate is 80% for those people in whom the use of antidepressants do not work. However, side effects of ECT may range anywhere from confusion to cardiac complications.

As with almost any medical illness, depression may be decreased in severity or prevented by knowing and understanding the basis of the illness. Depression may also be prevented by keeping the mind stimulated, maintaining an active interest in life, and seeking professional help when needed.[6]

Physical Therapy and Alterations of Treatment in the Elder With Depression

There are two main ways that a physical therapist will be working with a patient who has depression: 1) the patient has a diagnosis other than the depression which requires physical therapy or 2) the patient is referred to physical therapy for conditioning due to inactivity in the depressed state (decreased endurance, decreased ability to ambulate, decreased balance, decreased strength).[18] Signs, beyond those signs and symptoms previously listed, that a patient in physical therapy is depressed may include the following: they do not improve in the expected amount of time or they feel hopeless; or depression may be expressed through statements such as, "I can't walk like I used to," "I'm always hurting somewhere," or "I can't take care of myself anymore."[18,19] A statement such as "I would be better off dead" should never be taken lightly by the therapist and would, in most cases, necessitate a referral to a mental health professional.[18]

The greatest challenge in physical therapy with the depressed elder is motivation; the person feels like there is no reason to participate.[18] Goal-oriented therapy and the use of assistive devices for easier mobility tend to increase the motivation and participation of the patient. Other suggestions for therapy are to use a consistent approach with the patient by all health care team members, involve the patient in the treatment decisions, encourage a daily routine, avoid power struggles with the patient (instead, encourage participation), and provide resources such as mental health professionals and support groups.[17,18] Physical

therapists may play a role in the prevention of depression by encouraging active participation in an exercise/fitness program by elders in all settings.

Purpose

Although depression is a common mental health disorder in the elderly, it has been shown that recreation, leisure time, and social support are all predictors of health and psychological well-being. The purpose of this study is to compare depression in the elderly between those who stay in the Midwest (Minnesota or North Dakota) year-round and those who travel south for all or part of the winter. The research questions that will be addressed are as follows: 1) Is there a significant difference in rates of depression between those people who stay in the Midwest year-round and those who travel south for all or part of the winter? 2) Is there a difference in the level of education between the travelers and the non-travelers? 3) Is there a correlation between the respondents' level of education and their depression scores? 4) Is there a correlation between the respondents' occupations and their depression scores? 5) Is there a correlation between the total number of activities/hobbies the respondents participated in and their depression scores? 6) Are age and/or marital status predictors of depression in the elderly?

Significance

The information gathered in this study will be especially significant for those clinicians (therapists and otherwise) working in the Midwest and those places where the elderly tend to migrate for the winter. Due to the increasing percentage of older people in the population, it is important to understand how

various places of residence throughout the year may affect this population's mental health. Depression is one of the most treatable medical problems in the elderly, and awareness of its prevalence among individuals may also aid in prevention and treatment of this illness.

CHAPTER II

METHODOLOGY

This research project was granted approval by the Institutional Review Board at the University of North Dakota in May 1999 (Appendix A). Informed consent of each subject was implied with the return of the completed questionnaire.

Population and Sample

The research design of this study was a cross-sectional survey. A four-page self-administered questionnaire was sent to randomly selected individuals who were thought to be 65 years old or older. Names and addresses of the subjects were obtained through friends of this researcher, community contacts in this researcher's hometown area, and through the University of North Dakota Alumni Association. The target sample was comprised of 227 elderly people.

Questionnaire

The self-administered questionnaire consisted of two parts (Appendix B). The first part contained questions about the background of the subject. Questions were asked regarding age, gender, present marital status, level of education, current and past employment, and where the subject stays in the winter. Subjects were then asked questions about why they stay in the Midwest

or travel south, the population in their communities (or the one closest to them), and hobbies or activities in which they participate.

For the second part of the questionnaire, the Geriatric Depression Scale (GDS) was used. The GDS consists of 30 questions designed to rate depression specifically in the elderly population. The reliability and validity of this scale had been previously tested. The overall internal consistency was calculated using Chronbach's alpha coefficient giving a computed value of 0.94; this value indicates a high degree of consistency.[20] Validity was tested primarily by comparing the scores patients received on the GDS with their classification in the Research Diagnostic Criteria for depression with three categories: normal, mildly depressed, or severely depressed. The data, following an analysis of variance test, showed that the GDS is a valid indicator of depression in the elderly population, $F(2,97)=99.48$, $p<0.001$.

Procedure

Two hundred twenty-seven questionnaires were distributed in August and September 1999 to the randomly chosen subjects. A cover letter and prepaid business reply envelope accompanied each questionnaire. The cover letter explained the purpose and benefits of the study, assured the subjects that their information would remain confidential, and invited them to participate in the study. The questionnaires were accepted for this study through October 7, 1999.

Data Analysis

All data from the 68 completed questionnaires sent back were entered into the Statistical Package for the Social Sciences (SPSS) 8.0 for Windows

program. Descriptive statistics were used to characterize the subject profile for this study. An independent sample test was used to determine significance in depression rates between the travelers and non-travelers. A Mann-Whitney U-Test was used to determine significance of educational level on staying in the Midwest or traveling south. A Spearman correlation was used to correlate educational level and rates of depression in the subjects. A Pearson correlation was performed to correlate the total number of activities/hobbies in which the elders participated with their depression scores. Lastly, multiple regression, including variables of age, marital status, and the two combined, was used to identify the greatest predictor(s) of depression in the elderly population. All statistical tests were considered significant at the .05 level.

Data Reporting

This research project was conducted in partial fulfillment of the requirements for a Master of Physical Therapy degree at the University of North Dakota. The results will be shared with all interested individuals.

CHAPTER III

RESULTS

Two hundred seventeen questionnaires were mailed and ten were handed out at a presentation. Out of these 227 questionnaires, ten were returned undelivered due to an incorrect address with no forwarding address available. From the 217 remaining questionnaires, 136 (64%) were returned in time to be reviewed for the purposes of this study. Out of these 136 questionnaires, only 68 (50%) fit the criteria for the study. Five questionnaires either did not meet the age requirement of 65 years old, did not meet the "going south" requirement (went to Illinois and Ohio instead of a Sunbelt state), or did not want to participate and sent back an empty questionnaire form. The majority of questionnaires (63) not used in the study were eliminated as the GDS portion was incomplete and results could not be processed.

Subject Profile

The majority of respondents received this questionnaire through the mail (97.1%). Males and females responded almost equally (51.5% males and 48.5% females) to this study with an average age of 74.07 (SD=6.01, Range=23). The majority of the respondents were married (77.9%), had college degrees (57.4%), and were retired (92.6%). The people who were retired did so between ages 42 and 70, and worked in a variety of fields including education,

health care, law and administration; business, clerical and finance; and mechanics and engineering.[21] Each respondent was involved in five different activities and/or hobbies (SD=2) both physical and sedentary. Some of the most commonly listed activities/hobbies were reading, crafts, traveling, golfing, and walking. Refer to Table 2 for the complete subject profile.

Depression scores (Table 3) were both skewed and kurtosed as the actual depression rate in this sample of the population was very low. The average score in this sample was two (SD=3.7, Range=15) indicating no depression. In fact, only 11.8% of the sample fell into the mildly depressed category and 0% fell into the severely depressed category.

Respondents Who Stayed in the Midwest

Of the 68 respondents, 36 stayed in the Midwest year-round (Table 4). Top reasons listed for staying in the Midwest were that respondents liked the area and they liked staying in their own homes; many of the respondents listed more than one reason for staying in the Midwest. The majority of respondents who stayed in the Midwest lived in a private home (77.8%) and most of this elder group (66.7%) lived in what they considered to be a small town. Approximate populations in areas where elders resided in the Midwest ranged from 150 to 400,000 people.

Respondents Who Traveled South

Forty-seven percent of the sample used in this study traveled south to Arizona, Texas, Missouri, Hawaii, or Florida for all or part of the winter (Table 5).

Table 2. General Subject Profile

	Frequency (n)	Percentage
Received questionnaires:		
In the mail	66	97.1
At a presentation	2	2.9
Gender:		
Male	35	51.5
Female	33	48.5
Present marital status:		
Married	53	77.9
Widowed	13	19.1
Divorced	1	1.5
Living with someone	1	1.5
Level of education:		
College degree	39	57.4
High school diploma	21	30.9
Other	8	11.8
Current employment status:		
Retired	63	92.6
Employed	4	5.9
Occupation before retirement:		
Education, health care, law, administration	16	32.0
Business, clerical, finance	11	22.0
Mechanics, engineering	7	14.0
Science, research	5	10.0
Homemaker	4	8.0
Counseling, therapy, social services	3	6.0
Agriculture, conservation, wildlife	1	2.0
Selling	1	2.0
Hospitality, tourism, other customer service	1	2.0
Self-employed	1	2.0
Travel status:		
Stay in the Midwest	36	52.9
Travel south	32	47.1

Age:	n	$\bar{x} \pm SD$	Minimum	Maximum
	68	74.07±6.01	65	87

Table 3. Subject Profile: Geriatric Depression Scale Scores

	Frequency (n)	Percentage
Normal (0-9 points)	60	88.2
Mildly depressed (10-19 points)	8	11.8
Severely depressed (20-30 points)	0	0

n	$\bar{x} \pm SD$	Median	Mode	Minimum	Maximum
3	3±3.7	2	0	0	14

These elders went south for an average of five months. Any respondent who visited family or vacationed in the south for less than one month was considered to have stayed in the Midwest year-round. The top reasons for going south were the favorable climate and that the respondent has a home in the south; many elders in this group listed more than one reason for traveling south. The majority of people in this group lived in a private home both in the Midwest (84.4%) and when they traveled south (43.8%) in the winter. Most of the elders in this group lived in a small town (75%) while in the Midwest, but lived in a city (75%) when they traveled south for the winter. Approximate populations in areas where the respondents lived in the Midwest ranged from 120 to 2,000,000 people while the populations of their winter residences ranged from 1,000 to 2,500,000 people.

Analytical Statistics

An independent samples t test was used to answer the main research question in the study which was whether or not there was a significant difference

Table 4. Subject Profile: Elders Who Stayed in the Midwest

	Frequency (n)	Percentage
Reasons for staying in the Midwest:		
Multiple reasons	11	30.6
Like the Midwest	5	13.9
No answer given	5	13.9
Like staying in home	4	11.1
Like being close to family	2	5.6
Financial (not enough money)	2	5.6
Still working	2	5.6
Love winter activities	2	5.6
Feel too old to travel	2	5.6
Lost mate	1	2.8
Place of residence:		
Private home	28	77.8
Designated senior citizen apartment	4	11.1
Apartment	2	5.6
Other (includes condominium, townhouse)	2	5.6
Area of residence:		
Small town	24	66.7
City	8	22.2
Farm	4	11.1

in depression scores between those people who stayed in the Midwest and those who traveled south for all or part of the winter. It was found that there was no significant difference between the groups' depression scores, $t(66)=+1.377$, $p<.05$, two-tailed (Table 6). The average score on the GDS was 3.722 (SD=4.089) for those elderly who stayed in the Midwest and 2.500 (SD=3.090) for those who traveled south.

A Mann-Whitney U-Test was used to determine significance of the effect of levels of education on staying in the Midwest or going south in the winter. The results indicated no significant difference between the groups of travelers

Table 5. Subject Profile: Elders Who Traveled South

	Frequency (n)	Percentage
Reasons for traveling south:		
More favorable climate	18	56.3
Multiple reasons	8	25.0
Home is in the south	2	6.3
Change of area	1	3.1
Like activities in the south	1	3.1
Need milder weather due to physical problems	1	3.1
No answer given	1	3.1
Place of residence in the Midwest:		
Private home	27	84.4
Other (includes townhouse, condominium, motor home)	4	12.5
Apartment	1	3.1
Place of residence in the south:		
Private home	14	43.8
Other (includes condominium, townhouse, motorhome, travel trailer)	11	34.4
Apartment	6	18.8
Area of residence in the Midwest:		
Small town	24	75.0
City	6	18.8
Farm	2	6.3
Area of residence in the south:		
City	24	75.0
Small town	8	25.0
Farm	0	0

and non-travelers based upon their levels of education (categories narrowed down to high school diploma and college degree only), U=342, p=.063, with the sum of the ranks equal to 1110 for those who stayed in the Midwest and 720 for those who traveled south. Although not statistically significant, a trend was noticed in that more elders who went south had college degrees (21) versus high

Table 6. Summary Table for Independent Samples t Test for Depression Scores of Travelers Versus Non-Travelers

		n	Mean	Standard Deviation	t	df	Sig. (two-tailed)
Depression scores	Those who stay in the Midwest	36	3.7	4.1	1.377	66	.173
	Those who travel south	32	2.5	3.1			

school diplomas (6), while the levels of education of those respondents who stayed in the Midwest was more equally distributed (college degree=18, high school diploma=15).

A Spearman correlation was used to determine whether or not there was a correlation between the respondents' levels of education (narrowing the categories to high school diploma and college degree only, n=60) and their depression scores on the GDS. The results showed that there was no significant correlation between education and depression, r=.194, p=.137.

Due to the large variety of occupations reported in this sample, statistics were not processed to correlate occupations with rates of depression. However, it was found through cross tabulation that lower GDS scores were generally in the following three career clusters: 1) science and research, 2) business, clerical and finance, and 3) education, health care, law, and administration. Although very few respondents had depressive scores, mild depression was found in the following career clusters: 1) mechanics and engineering, 2)business, clerical, and finance, and 3) agriculture, conservation, and wildlife.

A Pearson correlation was used to determine the relationship between the total number of activities/hobbies in which the respondents participated and their depression scores. A correlation for these data revealed that the number of activities/hobbies and rates of depression were not significantly related, r=-.142, n=61, p<.05, two-tailed.

Finally, possible predictors for depression were assessed. Multiple regression was used and regression analysis included variables of age, marital status, and the two combined. The results revealed that age and marital status combined were a predictor of depression, adjusted r^2=.132, p=.004 (Table 7).

Table 7. Regression Summary Table for Depression Score and Predictors of Age and Marital Status

ANOVA					
Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	143.039	2	71.520	6.089	.004
Residual	763.490	65	11.746		
Total	906.529	67			
COEFFICIENTS					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-13.190	5.255		-2.510	.015
Age	.237	.072	.386	3.266	.002
Marital Status	-.713	.344	-.245	-2.072	.042

CHAPTER IV

DISCUSSION

Much research has been done on depression in the elderly population, including possible risk factors, diagnosis, epidemiology, expected future trends, and treatment of this illness. However, no studies were found relating depression rates to living in or traveling to different areas of the country. In this study, no significance was found in the depression scores between those elders who stay in the Midwest year-round and those who travel south for all or part of the winter. Possible reasons for this finding will be discussed.

Significance was found in only one of the six research questions in this study; the question asked whether or not age and/or marital status were predictors of depression in the elderly. Age and marital status combined were significant for the prediction of depression rates in this sample of the elderly population. This finding is consistent with previous literature on the subject.[5,10,11] Although not acceptable as a normal part of aging, the elderly population is more prone to depression, as they encounter stress regarding the loss of loved ones, decreased physical health, and a decreased social support status. As mentioned earlier, loss of a spouse was given the highest stress level rating in a study by Barrow.[6] This loss generates feelings of loneliness, anxiety, fear, and

isolation in the elder which could lead to depression as he/she attempts to work through this life event.[5]

The other five research questions which included traveling, levels of education, occupations, and the total number of activities/hobbies in which the elders were involved showed no correlation to rates of depression. Reasons for these findings will be discussed below.

Limitations

For future use and/or replication of this study, it is important to consider possible reasons for the results as previously discussed. These reasons are as follows: 1) a small sample size, 2) the return of incomplete questionnaires, and 3) low rates of depression in the sample overall.

Small Sample Size

The subjects for this study were obtained in only three ways: 1) through friends of this researcher, 2) community contacts in this researcher's hometown, and 3) the University of North Dakota Alumni Association. Subjects were chosen randomly through these contacts; however, it may be that there was a higher return rate from those respondents who know of this researcher personally.

Another reason for the small sample size is that only the states of Minnesota and North Dakota were considered to be the Midwest in this study. Addresses from other parts of the Midwest, such as Wisconsin, South Dakota, Iowa, and Missouri, to which surveys could have been sent were eliminated. This small sample area, obviously, reduced the sample size from the beginning of the study.

Incomplete Questionnaires

Only 50% of the returned questionnaires could be used in this study. The other 50% had incomplete GDS sections and had to be eliminated as results could not be processed from those questionnaires. Questionnaires were deemed incomplete for two reasons: 1) neither "yes" or "no" were circled on one or more questions, and/or 2) both "yes" and "no" were circled on one or more questions. Elimination of 50% of the questionnaires for this reason also markedly reduced the sample size used in this study.

Low Rates of Depression Overall

No significance in the research questions was found mainly because only 11.8% of the sample was found to have any depression at all; these scores were all under 15 indicating only mild depression (scores 10-19). Although this percentage falls within the normal range (10-15%) of elders who are depressed, correlations to depression in this study were found to be insignificant due to the low rates overall. These findings could also be related to the large number of incomplete questionnaires; it is possible that the incomplete questions may have changed these results had they been answered appropriately. The overall low depression rates could also be due to the small sample size in the study or the fact that more depressed elders did not want to return the questionnaire, while more satisfied elders did so willingly.

Recommendations for Future Studies

Due to the limitations listed above, results of this study must be interpreted with caution. Future studies and research in this area should aim to

eliminate the limitations noted in this study. A larger sample size may be obtained by increasing the sample area and including more of the Midwest (e.g., South Dakota, Wisconsin, Iowa, Missouri) and expanding the list of contacts to better cover all areas included. Other contacts may include the American Association of Retired Persons (AARP) or directors of various senior citizen centers (e.g., addresses may not be able to be given out, but a bulk mailing to the center may be able to be distributed).

More explicit instructions could be included on the GDS portion of the questionnaire to increase the chance that all questions would be completed appropriately. It may help to increase the size of the instructions and specifically state that the questionnaire needs to be complete (e.g., need to circle either "yes" or "no") in order for it to be used for the study. Telephone or personal interviews, in place of a mailed questionnaire, may also be helpful in reducing the limitations of incomplete questionnaire as well as reaching elders who are depressed. The Geriatric Depression Scale validity and reliability was tested through phone and personal interviews, and this method may be better suited for research of this kind.

The questionnaire filled out by respondents contained adequate information for the purposes of this study (Appendix B). However, further correlations could be made using an actual income level instead of asking for only the respondents' occupations (Question #7). Areas where the elders reside may be further delineated by defining populations of a farm, small town, or city

(Question #11 and #17). Questions may also be included or eliminated to suit the purpose of further research on this topic.

Future studies could also look at depression rates of elders in all parts of the country to see if any regional differences are noted. The research could also be expanded to study effects of illness (past and/or present) and various medications on the rate of depression in the elderly population.

CHAPTER V

CONCLUSION

Elderly people (those at least 65 years old) experience many changes in life as they get older including decreased physical health, loss of loved ones, and a decreased social support system. These life events and others are some of the main reasons that cause depression to be the primary mental health disorder in the elderly. Understanding risk factors and predictors of depression is important in health care in order to recognize and aid in prevention and treatment of the illness.

Many studies have been done on depression, but none were found which related rates of depression to living or traveling to various regions throughout the country. The results of this study showed no significant difference in depression between those elders who stayed in the Midwest year-round and those who traveled south for all or part of the winter. Due to the limitations of this study, these results should be interpreted with caution.

Future researchers on this subject may want to include a larger sample size, more explicit instructions to assure completion of the questionnaire, and phone or personal interviews to reach a wider variety of subjects. Further research in this area will be helpful as the elderly continue to be the fastest

growing population in the United States, and a population that will continue to utilize all aspects of health care.

APPENDIX A

REPORT OF ACTION: EXEMPT/EXPEDITED REVIEW

University of North Dakota Institutional Review Board

DATE: May 4, 1999 **PROJECT NUMBER:** IRB-9905-234

NAME: Sandra M. Zieffler **DEPARTMENT/COLLEGE:** Physical Therapy

PROJECT TITLE: A Comparison Study of Depression in the Elderly: Traveling South Versus Staying in the Midwest for the Winter

The above referenced project was reviewed by a designated member for the University's Institutional Review Board on May 9th, 1999 and the following action was taken:

☐ Project approved. **EXPEDITED REVIEW** No. _____.
Next scheduled review is on _____.

☒ Project approved. **EXEMPT CATEGORY** No. 2. No periodic review scheduled unless so stated in the Remarks Section.

☐ Project approved **PENDING** receipt of corrections/additions. These corrections/additions should be submitted to ORPD for review and approval. **This study may NOT be started UNTIL final IRB approval has been received.** (See Remarks Section for further information.)

☐ Project approval **deferred. This study may not be started until final IRB approval has been received.** (See Remarks Section for further information.)

☐ Project **denied.** (See Remarks Section for further information.)

REMARKS: Any changes in protocol or adverse occurrences in the course of the research project must be reported immediately to the IRB Chairperson or ORPD.

PLEASE NOTE: Requested revisions for student proposals MUST include adviser's signature.

cc: M. Danks, Adviser
Dean, Medical School

Signature of Designated IRB Member
UND's Institutional Review Board

Date

If the proposed project (clinical medical) is to be part of a research activity funded by a Federal Agency, a special assurance statement or a completed 310 Form may be required. Contact ORPD to obtain the required documents.

(1/98)

___EXPEDITED REVIEW REQUESTED UNDER ITEM ___ (NUMBER[S]) OF HHS REGULATIONS
_X_EXEMPT REVIEW REQUESTED UNDER ITEM _2___ (NUMBER[S]) OF HHS REGULATIONS

UNIVERSITY OF NORTH DAKOTA HUMAN SUBJECTS REVIEW FORM FOR NEW PROJECTS OR PROCEDURAL REVISIONS TO APPROVED PROJECTS INVOLVING HUMAN SUBJECTS

Please include ALL information and check ALL blanks that apply.

PRINCIPAL INVESTIGATOR: Sandra M. Zieffler **TELEPHONE:** 701-777-2831 **DATE:** 4-28-99

ADDRESS TO WHICH NOTICE OF APPROVAL SHOULD BE SENT: UND Department of Physical Therapy, P. O. Box 9037

SCHOOL/COLLEGE: UND/Medicine (E.g., A&S, Medicine, EHD, etc.) **DEPARTMENT:** Physical Therapy **PROPOSED PROJECT DATES:** 6/1/99-10/1/99 (Month/Day/Year)

PROJECT TITLE: A Comparison Study of Depression in the Elderly: Traveling South Versus Staying in the Midwest for the Winter

FUNDING AGENCIES (IF APPLICABLE): N/A

TYPE OF PROJECT (Check ALL that apply):

_X_ NEW PROJECT ___ CONTINUATION __ RENEWAL ___ DISSERTATION OR THESIS RESEARCH _X_ STUDENT RESEARCH PROJECT

___ CHANGE IN PROCEDURE FOR A PREVIOUSLY APPROVED PROJECT

DISSERTATION/THESIS ADVISER, OR STUDENT ADVISER: Meridee Danks

PROPOSED PROJECT: ____ INVOLVES NEW DRUGS (IND) ____ INVOLVES NON-APPROVED USE OF DRUG ____INVOLVES A COOPERATING INSTITUTION

IF ANY OF YOUR SUBJECTS FALL IN ANY OF THE FOLLOWING CLASSIFICATIONS, PLEASE INDICATE THE CLASSIFICATION(S):

___MINORS (<18 YEARS) ___PREGNANT WOMEN ___MENTALLY DISABLED ___ FETUSES ___ PERSONS WITH MENTAL RETARDATION

___PRISONERS ___ABORTUSES ___UND STUDENTS (>18 YEARS)

IF YOUR PROJECT INVOLVES ANY HUMAN TISSUE, BODY FLUIDS, PATHOLOGICAL SPECIMENS, DONATED ORGANS, FETAL MATERIAL, OR PLACENTAL MATERIALS, CHECK HERE_____

IF YOUR PROJECT HAS BEEN\WILL BE SUBMITTED TO ANOTHER INSTITUTIONAL REVIEW BOARD(S),PLEASE LIST NAME OF BOARD(S):
Status: ___ Submitted; Date _____ ___ Approved; Date_____ _____Pending

1. ABSTRACT: (LIMIT TO 200 WORDS OR LESS AND INCLUDE JUSTIFICATION OR NECESSITY FOR USING HUMAN SUBJECTS.

Elderly people (people 65 years old and older) comprise approximately 13% of the United States population and are the fastest growing age group at this time.[1,2] In Minnesota and North Dakota, 14-15.9% of the population in each state is at least 65 years old, and that percentage is expected to increase to over 16% by the year 2020.[2] People in this age group experience multiple losses such as deaths of family and friends, decreased physical health, and changes in financial

and social status.[3,4] It is not surprising then, that depression is a common mental health disorder in older people. However, it has been shown that recreation, leisure time, and social support are all predictors of health and psychological well-being.[5] The purpose of this study is to compare depression in the elderly between those who stay in the midwest (North Dakota or Minnesota) year-round and those who travel south for all or part of the winter.

A questionnaire will be sent or given to randomly selected community-dwelling people who are at least 65 years old and reside in Minnesota or North Dakota for at least part of the year. The questionnaire includes background information and the Geriatric Depression Scale.[6]

PLEASE NOTE: Only information pertinent to your request to utilize human subjects in your project or activity should be included on this form. Where appropriate attach sections from your proposal (if seeking outside funding).

2. PROTOCOL: (Describe procedures to which humans will be subjected. Use additional pages if necessary. Attach any surveys, tests, questionnaires, interview questions, examples of interview questions (if qualitative research), etc., the subjects will be asked to complete.)

Subjects: People 65 years old and older will be sent or given a questionnaire. Subjects will be attained in a variety of ways (e.g. presentations at various senior citizen meetings, random mailings, etc.). All subjects must be community-dwellers and reside in North Dakota or Minnesota for at least part of the year. If individuals travel for the winter, it must be travel to the south (to the Sunbelt states of Texas, Florida, Arizona,etc.). Individuals who reside in long-term care facilities will be excluded from this study.

Instrument: The survey will include a cover letter and two parts. (All parts are attached.) The first part contains background questions regarding demographic information, and the second part of the questionnaire is the Geriatric Depression Scale.[6] This scale is designed specifically to rate depression in the elderly. The reliability of the Geriatric Depression Scale has a calculated alpha of 0.94 which indicates a high level of reliability.

Procedure: Questionnaires will be distributed in two ways beginning in June 1999. The questionnaire and cover letter may be sent to individuals along with a pre-addressed business envelope. The questionnaire may also be given to individuals following a brief presentation at various senior citizen's meetings. Permission will be obtained from appropriate personnel prior to this presentation. The presentation will include information from the cover letter, and questions may be addressed at that time.

Data Analysis: Descriptive and analytical statistics with an alpha level of .05 will be used to compile the data.

Data Reporting: Results from the questionnaire will be reported in the independent study which will be placed in the University of North Dakota School of Medicine and Health Sciences Library upon completion. Any subjects interested in the results will also be encouraged to contact the UND Department of Physical Therapy at their convenience.

3. BENEFITS: (Describe the benefits to the individual or society.)

Due to the increasing percentage of elderly in the population, it is important to understand how various places of residence throughout the year may affect the mental health of this population. The information will be particularly useful for clinicians working in the midwest and those places where older people tend to migrate to for the winter. Depression is one of the most treatable medical problems in the elderly, and awareness of its prevalence among individuals will aid in prevention and treatment of this illness.[7]

4. RISKS: (Describe the risks to the subject and precautions that will be taken to minimize them. The concept of risk goes beyond physical risk and includes risks to the subject's dignity and self-respect, as well as psychological, emotional or behavioral risk. If data are collected which could prove harmful or embarrassing to the subject if associated with him or her, then describe the methods to be used to insure the confidentiality of data obtained, debriefing procedures, etc.

Risks to subjects who participate in this study will be minimal. The Geriatric Depression Scale, an often used clinical measure, has been proven to be reliable[6], therefore, the greatest risk involves confidentiality. However, all questionnaires will be completed anonymously and all data will be reported in aggregate. Data will be kept in a confidential file by the

University of North Dakota Department of Physical Therapy for three years following completion of the study.

5. **CONSENT FORM:** Attach a copy of the **CONSENT FORM** to be signed by the subject (if applicable) and/or any statement to be read to the subject should be attached to this form. If no **CONSENT FORM** is to be used, document the procedures to be used to assure that infringement upon the subject's rights will not occur.

Describe where signed consent forms and data will be kept for the required 3 years, including plans for final disposition or destruction.

There will be no consent form for this study. Each subject will receive a cover letter with the questionnaire which will introduce them to the study and invite them to participate. Return of the questionnaire will be viewed as implied consent.

6. For **FULL IRB REVIEW** forward a signed original and fifteen (15) copies of this completed form, including fifteen (15) copies of the proposed consent form, questionnaires, examples of interview questions, etc. and any supporting documentation to:

Office of Research & Program Development
University of North Dakota
Grand Forks, North Dakota 58202-7134

On campus, mail to: Office of Research & Program Development, Box 7134, or drop it off at Room 105 Twamley Hall.

For **EXEMPT** or **EXPEDITED REVIEW** forward a signed original, including a copy of the consent form, questionnaires, examples of interview questions, etc. and any supporting documentation to one of the addresses above.

The policies and procedures on Use of Human Subjects of the University of North Dakota apply to all activities involving use of Human Subjects performed by personnel conducting such activities under the auspices of the University. No activities are to be initiated without prior review and approval as prescribed by the University's policies and procedures governing the use of human subjects.

SIGNATURES:

Principal Investigator Date

Project Director or Student Adviser Date

Training or Center Grant Director Date

(Revised 4/1998)

References

1. Kart CS. The Realities of Aging: An Introduction to Gerontology. 4th ed. Boston, MA: Allyn and Bacon; 1994.

2. Butler RN, Lewis MI, Sunderland T. Aging and Mental Health: Positive Psychosocial and Biomedical Approaches. Boston, MA: Allyn and Bacon; 1998.

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7. Billig N. To Be Old and Sad: Understanding Depression in the Elderly. Lexington, MA: Lexington Books, D. C. Heath and Company; 1987.

STUDENT RESEARCHERS: As of June 4, 1997 (based on the recommendation of UND Legal Counsel) the University of North Dakota IRB is unable to approve your project unless the following "Student Consent to Release of Educational Record" is signed and included with your "Human Subjects Review Form."

STUDENT CONSENT TO RELEASE OF EDUCATIONAL RECORD[1]

Pursuant to the Family Educational Rights and Privacy Act of 1974, I hereby consent to the Institutional Review Board's access to those portions of my educational record which involve research that I wish to conduct under the Board's auspices. I understand that the Board may need to review my study data based on a question from a participant or under a random audit. The study to which this release pertains is "A Comparison Study of Depression in the Elderly: Traveling South Versus Staying in the Midwest for the Winter"

I understand that such information concerning my educational record will not be released except on the condition that the Institutional Review Board will not permit any other party to have access to such information without my written consent. I also understand that this policy will be explained to those persons requesting any educational information and that this release will be kept with the study documentation.

_____

Signature of Student Researcher Date

[1]Consent required by 20 U.S.C. 1232g.

APPENDIX B

Hello!

My name is Sandra Zieffler and I am working on my Master's degree in Physical Therapy at the University of North Dakota. In partial fulfillment of the requirements for that degree, I am doing an independent study, and I am asking for your participation.

The purpose of the study is to compare life satisfaction of people who are 65 years old and older who stay in the midwest (North Dakota or Minnesota) year-round with those who travel south for all or part of the winter. The results of the study will be beneficial for health care professionals by making them more aware of factors related to life satisfaction in the elderly population.

A four page questionnaire has been designed for this study. The questionnaire contains two parts: the first part asks for your background information and the second part asks questions about your level of life satisfaction at this time. It is being sent or given to randomly selected, community dwelling individuals who are at least 65 years old, and reside in either North Dakota or Minnesota for at least part of the year. You are one of the many individuals selected for the study. You can be assured that your answers will remain confidential as no personal identification is included on the questionnaire.

I would appreciate your participation in this study. The questionnaire will take approximately 15 minutes to complete. A pre-addressed business envelope has been enclosed for your reply.

Thank you for your time! If you have any questions, need more information, or are interested in knowing the results of this study, please feel free to call me at 218-675-6067 (from June-August), or contact Meridee Danks (Advisor) or myself at 701-777-2831 at any time. I will return your call as soon as possible.

Sincerely,

Sandra M. Zieffler, Physical Therapy Student

BACKGROUND INFORMATION

Please check the blank which best describes your answer. Some answers may require that you fill in your answer in the space provided.

1. How did you receive this questionnaire? ____ In the mail ____ At a presentation

2. Age _____

3. Gender: ____ Female ____ Male

4. Present marital status: ____ Single ____ Separated ____ Widowed
   ____ Married ____ Divorced ____ Living with someone

5. Do you have anyone else who lives with you at this time (excluding individuals listed in question #4)? ____ No ____ Yes, please list their relation to you: _____

6. Which describes your level of education? ____ College degree
   ____ High school diploma
   ____ Other, please list grade level completed:____

7. What is your current employment status?
   ____ Employed, please go to question 7a.
   ____ Retired, please go to question 7b.

   7a. How many hours per week do you work? _____
   What is your current occupation? _____

   7b. What was your age at retirement? ____
   What was your occupation(s)? _____

8. Do you presently stay in the midwest in the winter?
   ____ Yes, please answer **#9-13**
   ____ No, please answer **#14-19**

If you stay in the midwest for the winter, please answer questions #9-13.

9. What is your primary reason for staying in the midwest for the winter?

10. What is your place of residence? ____ Private home ____ Apartment
    ____ Designated senior citizen apartment ____Other, please specify:_____

11. Describe the area in which you live: ____ Farm ____ Small town ____ City

12. What is the approximate population in your community or the community closest to you?
    _____

13. Describe your primary activities and hobbies:

Please continue with the questionnaire on page 3

If you travel south for all or part of the winter, please answer questions #14-19 below.

14. What is your primary reason for traveling south for all or part of the winter?

15. Where do you travel to in the winter? _____
    How long do you stay there? _____

16. What is your place of residence in the *winter*? ____ Private home ____ Apartment
    ____ Designated senior citizen apartment ____ Other, please specify:_____

    What is your place of residence *the rest of the year*? ____ Private home ____ Apartment
    ____ Designated senior citizen apartment ____ Other, please specify

17. Describe the area in which you live in the *winter*: ____ Farm ____Small town ____City

    Describe the area in which you live *the rest of the year*:____Farm ____Small town ____City

18. What is the approximate population in your community or the community closest to you *winter*? _____

    What is the approximate population in your community or the community closest to you *the rest of the year*? _____

19. Describe your primary activities and hobbies in the *winter*:

    Describe your primary activities and hobbies *the rest of the year*:

Please continue with the questionnaire on the next page (page 3)

Choose the best answer for how you felt over the past week.

1. Are you basically satisfied with your life? YES NO
2. Have you dropped many of your activities and interests? YES NO
3. Do you feel that your life is empty? YES NO
4. Do you often get bored? YES NO
5. Are you hopeful about the future? YES NO
6. Are you bothered by thoughts you can't get out of your head? YES NO
7. Are you in good spirits most of the time? YES NO
8. Are you afraid that something bad is going to happen to you? YES NO
9. Do you feel happy most of the time? YES NO
10. Do you often feel helpless? YES NO
11. Do you often get restless and fidgety? YES NO
12. Do you prefer to stay at home, rather than going out and doing new things? YES NO
13. Do you frequently worry about the future? YES NO
14. Do you feel you have more problems with memory than most? YES NO
15. Do you think it is wonderful to be alive now? YES NO
16. Do you often feel downhearted and blue? YES NO
17. Do you feel pretty worthless the way you are now? YES NO
18. Do you worry a lot about the past? YES NO
19. Do you find life very exciting? YES NO
20. Is it hard for you to get started on new projects? YES NO
21. Do you feel full of energy? YES NO
22. Do you feel that your situation is hopeless? YES NO
23. Do you think that most people are better off than you are? YES NO
24. Do you frequently get upset over little things? YES NO

25. Do you frequently feel like crying? YES NO

26. Do you have trouble concentrating? YES NO

27. Do you enjoy getting up in the morning? YES NO

28. Do you prefer to avoid social gatherings? YES NO

29. Is it easy for you to make decisions? YES NO

30. Is your mind as clear as it used to be? YES NO

Thank you again for your time and participation in this study! Please use the enclosed pre-addressed business envelope to return the questionnaire.

REFERENCES

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